

WHAT IS CLAIMED IS:

1. Glycosyl sulfotransferase-3 present in other than its natural environment.
2. The glycosyl sulfotransferase-3 according to Claim 1, wherein said glycosyl sulfotransferase-3 is human glycosyl sulfotransferase-3.
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3. The glycosyl sulfotransferase-3 according to Claim 1, wherein said glycosyl sulfotransferase-3 has an amino acid sequence substantially identical to the sequence of SEQ ID NO:02.
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4. A fragment of the glycosyl sulfotransferase-3 according to Claim 1.
5. A nucleic acid present in other than its natural environment, wherein said nucleic acid has a nucleotide sequence encoding glycosyl sulfotransferase-3.
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6. A nucleic acid according to Claim 5, wherein said nucleic acid has a nucleic acid sequence that is substantially identical to the nucleotide sequence of SEQ ID NO:01.
7. A fragment of the nucleic acid according to Claim 5.
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8. An isolated nucleic acid or mimetic thereof that hybridizes under stringent conditions to the nucleic acid according to Claim 5 or its complementary sequence.
9. An expression cassette comprising a transcriptional initiation region functional in
25 an expression host, a nucleic acid having a nucleotide sequence found in the nucleic acid according to Claim 5 under the transcriptional regulation of said transcriptional initiation region, and a transcriptional termination region functional in said expression host.

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10. A cell comprising an expression cassette according to Claim 9 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell.

5 11. The cellular progeny of the host cell according to Claim 10.

12. A method of producing glycosyl sulfotransferase-3, said method comprising: growing a cell according to Claim 10, whereby said glycosyl sulfotransferase-3 is expressed; and

10 isolating said glycosyl sulfotransferase-3 substantially free of other proteins.

13. A monoclonal antibody binding specifically to glycosyl sulfotransferase-3.

14. The antibody according to Claim 13, wherein said antibody inhibits sulfation
15 activity of said glycosyl sulfotransferase-3.

15. The monoclonal antibody according to Claim 13, wherein said antibody is a humanized antibody.

20 16. A method for inhibiting a binding event between a selectin and a selectin ligand, said method comprising:

contacting said selectin with a non-sulfated selectin ligand, a sulfotransferase selected from the group consisting of glycosyl sulfotransferase-3 and KSGal6ST, and an agent that inhibits the sulfation activity of said sulfotransferase.

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17. The method according to Claim 16, wherein said agent is a small molecule.

18. A method of inhibiting a selectin mediated binding event in a mammalian host, said method comprising:

administering to said host an effective amount of a pharmaceutical composition comprising an active agent that modulates the sulfation activity of a sulfotransferase selected from the group consisting of GST-3 and KSGal6ST and homologues thereof.

5 19. The method according to Claim 18, wherein said active agent inhibits the sulfation of activity of said sulfotransferase.

10 20. The method according to Claim 19, wherein said agent is a small molecule.

21. The method according to Claim 19, wherein said agent is an antibody.

15 22. The method according to Claim 19, wherein said active agent modulates the expression of said sulfotransferase.

23. A method of modulating a symptom in a mammalian host of a disease condition associated with a selectin mediated binding event, said method comprising:

20 administering to said host a pharmaceutical composition comprising an effective amount of an active agent that modulates the sulfation activity of a sulfotransferase selected from the group consisting of GST-3 and KSGal6ST and homologues thereof.

24. The method according to Claim 23, wherein said symptom is inflammation.

25 25. A method of diagnosing a disease state in a host related to the abnormal levels of sulfotransferase selected from the group consisting of glycosyl sulfotransferase-3 and KSGal6ST, said method comprising:

determining the amount of an analyte in a sample from said host, wherein said analyte is selected from the group consisting of said sulfotransferase or a nucleic acid related thereto; and

comparing the amount of said analyte in said host sample to a control value.

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26. The method according to Claim 25, wherein said determining is quantitative.

27. The method according to Claim 25, wherein said determining is qualitative.

10 28. A method of determining whether an agent is capable of modulating the activity of a sulfotransferase selected from the group consisting of glycosylsulfotransferase-3 and KSGal6ST, said method comprising:

contacting a sulfotransferase with a sulfate source, an acceptor compound and said agent; and

15 determining the affect of said agent on said sulfotransferase activity.

29. A non-human transgenic animal model for *Gst-3* gene function wherein said transgenic animal comprises an introduced alteration in a *Gst-3* gene.

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